

Appl. No. 09/519,076  
Amdt. dated March 15, 2004  
Reply to Office Action of March 11, 2003

PATENT

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-46. (Canceled)

47. (Currently amended) An isolated polypeptide monomer of a pH sensitive potassium channel, the monomer:

(i) forming a potassium channel having a unit conductance of 80-120 pS and having increased potassium channel current amplitude above intracellular pH of 7.1, when the monomer is expressed in *Xenopus* oocyte; and

(ii) encoded by a nucleic acid that specifically binds under stringent hybridization conditions to the complement of a nucleic acid encoding an amino acid sequence of ~~SEQ ID NO:1, SEQ ID NO:3~~, SEQ ID NO:16 or SEQ ID NO:18, wherein the hybridization reaction is incubated at 42°C in a buffer comprising 50% formamide, 5x SSC, and 1% SDS, and washed at 65°C in a buffer comprising 0.2x SSC and 0.1% SDS.

48. (Canceled)

49. (Currently amended) An isolated monomer of claim 47, wherein the monomer has an amino acid sequence of ~~SEQ ID NO:1~~, SEQ ID NO:16 or SEQ ID NO:18.

50. (Previously presented) An isolated monomer of claim 47, wherein the monomer has a molecular weight of about 126 kDa, which is calculated from amino acid sequence of the monomer.

51. (Previously presented) An isolated monomer of claim 47, wherein the monomer is a subunit of a homomeric potassium channel.

52. (Currently amended) An isolated polypeptide monomer of a pH sensitive potassium channel, the monomer:

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(i) forming a potassium channel having a unit conductance of 80-120 pS and having increased potassium channel current amplitude above intracellular pH of 7.1, when the monomer is expressed in *Xenopus* oocyte; and

(ii) encoded by a nucleic acid that specifically binds under stringent hybridization conditions to the nucleic acid disclosed in ~~SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:17 or SEQ ID NO:19~~, wherein the hybridization reaction is incubated ~~at 37°C in a buffer comprising 40% formamide, 1M NaCl, and 1% SDS, and washed at 45°C in a buffer comprising 1x SSC at 42°C~~ in a buffer comprising 50% formamide, 5x SSC, and 1% SDS, and washed at 65°C in a buffer comprising 0.2x SSC and 0.1% SDS.

53. (Canceled)

54. (Currently amended) An isolated monomer of claim 52, wherein the monomer has an amino acid sequence of ~~SEQ ID NO:1~~, SEQ ID NO:16 or SEQ ID NO:18.

55. (Previously presented) An isolated monomer of claim 52, wherein the monomer has a molecular weight of about 126 kDa, which is calculated from amino acid sequence of the monomer.

56. (Previously presented) An isolated monomer of claim 52, wherein the monomer is a subunit of a homomeric potassium channel.